

To Dr Hart Salop

EXPERIMENTS,

A N D

OBSERVATIONS

O N T H E

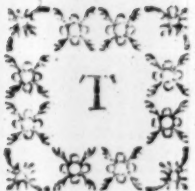
Malvern Waters.



Worcester: Printed in the Year 1756.



EXPERIMENTS,
AND
OBSERVATIONS
ON THE
Malvern Waters.

HE well attested Report of extraordinary Cures perform'd by the Use of Malvern Waters, having engag'd the Attention of several Persons of great Rank and Fortune in this Neighbourhood, I have been call'd upon to acquaint the Public with some of the Experiments and Observations which I have made upon them.

There are two Springs which more peculiarly deserve Notice. The Source of one is about a Quarter of a Mile below the Village of great Malvern: This is a light and very pleasant Chalybeat. The other rises higher up the Hill, about the Midway betwixt Great and Little Malvern, and has been long distinguish'd by the Name of the Holy Well; having for more than a Cen-

ture been famous for the Cure of many obstinate Diseases † .

Both these Springs are of uncommon purity. In the Year 1743, after a very dry Season, I evaporated three Quarts of the Holy Well Water in an open Silver Vessel; when no Residuum was left that could be collected, only the bottom of the Vessel was tinged of a pale Yellow Colour: A Proof that the Water contains some Bituminous or oily Parts. And this Year, after a long wet Season, when the Source must have receiv'd

Beside these two Springs there is also a third which flows about 100 Yards higher up the Hill than the Holy Well; this has been thought more appropriated to Diseases of the Eyes; but as it does not seem (upon any Trials) to differ from the Water of the Holy Well, I therefore did not think it necessary to take any particular Notice of it.

Mention is made of these Springs in Bannister's Breviary of the Eyes printed A. D. 1622. in these Lines.

' A little more I'll of their curing tell,
How they help sore Eyes with a new found Well:
Great Speech of Malvern Hills was late reported,
Unto which Spring People in Troops resorted.

In the Addenda to Camden's Britannia are the following Words. ' Near the Division (betwixt Worcestershire
' and Herefordshire) is a Spring that hath been long
' fam'd for the Value of healing Eyes, and other parts
' of the Head, call'd therefore Eye Well. And beside
' this is another Spring call'd Holy Well, heretofore
' much resorted to for curing all Scorbutic Humours
' and external Ulcers by bathing and drinking of the
' Waters' ? — And in the Geography reformed these
Wells are taken Notice of in these Words. ' There are
' two Medicinal Springs (in Malvern Hills) call'd
' Holy Wells, one of which is good for the Eyes and
' putrid fatid Livers; the other for Cancers'.

some

some Foulness from the mixture of extraneous Bodies washed into it by the continual Rains, Two Quarts of this Water, being carefully and slowly evaporated, left only half a Grain of Earth, and a very inconsiderable Quantity of a saline Matter, too small to be estimated: probably not the 60th part of a Grain.

This extraordinary Purity seems to be the distinguishing Characteristic of these Waters; in which Respect, they greatly exceed any that have hitherto come to our Knowledge. The purest Waters in the City of Worcester

contain more than 50 times,	} as much Earth as the Holy Well Water at Malvern does.
The Hot Well at Bristol	
20 times,	
And the Spring at Henwick Hill near this City, which has been always thought extremely pure, contains 12 times	

It may be proper here to observe, that this Earth (by which Word We mean the Matter left upon the Evaporation of Mineral Waters when perfectly clear'd of all Salts) is soluble only in part by the strongest Acids; but that the much greater Portion of it eludes their Force, and even the Violence of Fire itself: much less therefore can it be conquer'd by the Digestive Powers of the human Body. Those Waters consequently must be most salutary which contain the fewest of these insoluble Particles †.

† It is an old and just Observation that Persons who drink Waters loaded with these Stryptick Particles are liable to stumous Complaints and Glandular Obstruction.

The Chalybeat Spring approaches the Holy Well nearly in Point of Purity : For two Quarts of this are found to contain only one Grain of Earth, one Grain of Iron and nearly the same Quantity of a muriatic Salt, which grows moist in the Air and therefore appears to be Bittern.

On this Account, it seems to challenge one of the first places amongst the Waters of this Class. For though it be not so highly impregnated with Iron as some others, yet is it sufficiently so to answer all our Expectations from it as a Chalybeat ; and being much less loaded with Earth than any other, it seems probable that the Ferruginous Particles will for that Reason be more readily and intimately mixt with the Blood and Juices, whilst the Water by its extreme Purity pervading the finest Vessels washes away the acrimonious Salts and obstructing Viscidities.

From the most accurate Analyses it appears that at the Spring Head Pouhon Spa Water contains 4 times more of the Chalybeat Principle than this Spring ; but at the same Time is loaded with 4 times more Earth. Tunbridge Water contains 3 times more Iron ; but has 6 times

ons, particularly to a swelling in the Throat named the Bronchocele. The Reason of which seems to be that those Earths, tho' small enough to enter the Lacteals, and circulate through the larger Vessels, yet are not reduced to a sufficient Degree of Tenuity to pass the Glands, where the Vessels are smallest and most convoluted, and the Force of the Circulation most Languid.

The Inhabitants of Paris are extremely subject to Nephritic and Calculous Disorders, probably for the same Reason, their Waters being of a petrifying Quality and so much loaded with Spar and Stony Particles as to stop up the Water Pipes in a short Time.

more

more Earth. Cheltenham and Scarborough Waters have only the same Quantity of Iron, but are very much loaded with Earth: Cheltenham Water in particular contains 88 times more than this Spring. And, to instance no more, Bath Water has 9 times less of the Chalybeat Principle, and contains 28 times more insoluble Parts than the Malvern Water does,

Thus far I have consider'd the Purity of these Waters in Respect of Earth; but they are also possess'd of a Mineral Spirit, and some other Principles, not so easily discoverable by Experiments, to which notwithstanding their Vertues may probably be in a great measure owing.

The Water of the Chalybeat Well at the Spring Head instantly strikes a fair Purple with Galls; and if carefully taken up and close cork'd, will retain the same Property several Hours; but the Colour gradually grows more and more pale, and at last approaches to the Orange. To have this Water therefore in full Perfection it must be drank at the Source.

The Water of the Holy Well, when drank immediately as it comes out of the Hill, leaves a peculiar Pertness in the Throat. This is by some likened to the Taste of Brass or Alum, and is most perceptible by Those who have not been used to the Water; But this Taste is soon lost, and the Water grows softer after it has been kept some Time, though the Bottles be ever so carefully stoppt. With this Water either Acids or Alcalies mix without the least Alteration in Trans-

parency, and without any Precipitation or Conflict. And yet it seems to contain a conceal'd Acid, because Iron laid in the Water is corroded; and a Solution of Silver, though at first it mixes without any Milkiness, yet by standing some Time the Water grows gradually whitish, and then muddy, and of a dirty reddish Purple, and at last a Powder of a deep purple Colour is precipitated; which is the Effect of the Vitriolic Acid. A Solution of Soap in Spirit of Wine being poured into this Water, produces a very pale Pearl Colour but without curdling in the least. This Colour is much less milky in dry Seasons than after much Rain; a Proof that the Water is more pure in the former†.

I have had some Suspensions that this Water received a slight Impregnation from Copper; the Volatile Spirit of Sal Ammoniac seeming to give it a light Tincture of Blue: But the Colour was so very dilute that I cannot be positive in that particular.—From the apparent Purity of this Water one would expect that it should keep well; yet on the contrary, after some Time, it is apt to acquire an offensive Taste, and sometimes it contracts great Foulness; and this when it has been taken up and preserv'd with the greatest Care. Qu? Does this proceed from the Putrefaction of its oily or bituminous Parts? or Does it not rather shew that there may be some latent Substances in the Water, which our Experiments

† Those Persons who use this Water externally to Sores &c. find a very perceptible difference in its Effects in dry Seasons and after much Rain; it agreeing with them much better in the former.

have not as yet discover'd †?

Upon the whole, the Efficacy of this Water seems chiefly to arise from its great Purity; whereby it is enabled to pass through the smallest Vessels, and not being loaded with any Salts or Earth, is capable of dissolving more than those Waters which are already saturated with them. Its Effects externally, both in Lotion and Bathing, may in a great Measure depend upon the same; since it is past all doubt, that Fluids may enter the Body this Way by the absorbing Vessels; and that those will be most easily admitted which are purest and least loaded with heterogeneous Particles. And as Waters which are full of Styptic or insoluble Earths, are well known to occasion glandular Obstructions; so, vice versâ, pure elementary Water, seems to be the most efficacious of all Remedies in these Disorders††.

But beside this extreme Purity, the Water before Us must be assisted in its Action by the volatile mineral Spirit, which it appears to contain, as well as by the bituminous or oily Parts; and probably by some others not yet discover'd. For however the Methods of examining Mineral

† Too much Care cannot be taken by those who send for this Water from the Well that their Bottles be perfectly clean; since it is known that this Water will dissolve those Foulnesses which common Water will not touch.

†† Waters full of Earthy Particles are found to foul and incrust the Vessels in which they are boil'd; as is evident in Tea Kettles &c. which Vessels may again be perfectly clear'd by boiling some of these Pure Waters in them,

Waters

Waters may have been improved by the Sagacity of later Chymists, We are certainly still very far from Perfection in that Point; and perhaps the most active Parts of Waters, on which their Vertues chiefly depend, may lie so much out of our Reach, as not to be the Objects of Sense, or discoverable by any Experiments. Let any One examine the most curious Analyses of Bath of Spa Waters hitherto publisht, and he must necessarily be convinc'd of this Truth. Some Preparations of Antimony and other Minerals will, We know, communicate very extraordinary Qualities to Liquors in which they are infused; and yet as nothing discernible is lost by the Mineral, so nothing could by any Analysis be discovered in the medicated Liquor. May not Waters therefore be impregnated in somewhat the same Way, by Effluvia from mineral Substances; perhaps from some hitherto unknown to Us, and whose Properties therefore We are unacquainted with? And who would venture to assert that there may not be many such in the Bowels of the Earth*?

* *Variae dantur Aquae, heterogeneis quibusdam Qualitatibus imbutae, quae vulgarem explorandi methodum, adeoque etiam Cognitionem nostram fallunt. Idque haud mirandum est, cum & menstrua insipida habeamus, quae quanquam metalla & ipsas gemmas molliores antea preparatas adorianatur, nullam tamen Salfedinem vel Linguae imprimunt, vel aliis viis facile a se dimittunt. Referendi huc sunt quidam fontes salutares. e. g. Slangenbadenses, Piperanae, Toplicenses thermæ, in quibus, præter eximiam levitatem, vulgaria examina nihil fere peregrini & solidi deprehendere possunt. Pertinet huc Insignis Becheri Observatio de Spiritu Luti cœrulei in Scaturiginibus obvii, magnarum plane virium licet*

But

But whether by any Experiments We can discover the principal Contents of this Water or not, so long as it is found to produce such extraordinary Effects, We may there rest satisfied. And Experience here speaks loudly in its Favour; it having long been used with great Success, particularly in Disorders of the Eyes, Schrophulous Cases, old Ulcers, Leprosies and other Diseases of the Skin.

A considerable Tradesman of this Town had, when a Boy, several sinuous Ulcers above and below the Elbow, which communicated through the Joint; the Bones were much enlarged and foul, and the Arm much emaciated. He had been long attended by two eminent Surgeons who thought the Case desperate and had proposed Amputation. He was reduced to the last Degree of Weakness; but by the Use of this Water a few Months, all the Ulcers except one below the Elbow were heal'd. This continued to discharge a small Quantity till He returned again to the Well the next Summer, when He obtain'd a compleat Cure, and has continued well ever since. After he first began upon the Waters, He never used any other Application to the Sores, but Linnen Rags dipt in the Water. This Cure was perform'd several Years ago.

insipidus sit.

Juncker. in Consp. Chem. Tab.
de Aq. &
Becherus in Phys. subterr. passim.
A

A Poor Woman of the Parish of Powick, near this City, was cover'd with the most frightful Leprosy I ever saw. The Scabs were very large, and in many Places not less than half an Inch thick. She had lost her Eyebrows, and was so hoarse that She could hardly be understood. Many Medicines had been tried both by me and others ineffectually; at last she was sent to Malvern, and a little Hut built for Her Reception by the Charity of a neighbouring Gentleman. She used the Water both externally and internally. In a few Months Her Skin was clear'd, and she recover'd her Voice; and by continuing the Use of the Water, was perfectly cured, without ever having any Return of the Disease.

A young Woman, Daughter of a Tradesman in Bewdley, had long had a Schrophulous Ophthalmia in each Eye, which made her unable to bear the Light. She had been in this miserable Condition eight or nine Months; and though She had applied to several Persons of Skill, had not met with any permanent Relief. I advis'd Her at length to try Malvern Water. — When She was brought to the Well, She could not open her Eyes, but was forced to be led by another Person; but she had not used the Waters more than a Week, before she was so much recover'd that she could see a Flea leaping on her Bed. Her Eyes have continued perfectly clear, and her Sight good, ever since. This Cure was performed Anno 1754.

The Son of a Tradesman in this Town, a
Child

Child of about Three Years of Age, had the Glands of the Neck much hardned and enlarged; He had a Schrophulous Ophthalmia in each Eye, and his Lips were much swell'd; the Upper, in particular, projected further than the End of the Nose, which it quite touch'd, was turned outward, and excoriated with several very deep Fissures. He was attended by me and an eminent Surgeon of this Place. When We found our joint Endeavours unsuccessful, We advised the Parents to try Malvern Waters. After the Use of them for two or three Months, He returned home, with his Eyes and Lips quite heal'd, and reduc'd to their natural Appearance; the Glands of the Neck were also much lessen'd. The Disorder in his Eyes returning again in a slight Degree, the next Spring, they had again Recourse to the same Waters; which so far perfected the Cure, that there now remain only two or three harden'd Glands under the Chin, but these very small in Size. His Eyes and Lips have continued perfectly well ever since.

It would swell this Paper to too great a Size, should I endeavour to collect the numerous Instances that might be produced of the sanative Effects of these Waters. There are now at the Well some very remarkable Cases which have lately receiv'd great Benefit from their Use; and I doubt not but every Year's Experience will furnish many more; especially when proper Accommodations are made near the Well, for the Reception and Relief of the Diseased, who hitherto have used the Waters under the most
disadvan-

disadvantageous Circumstances. Indeed there cannot be a more evident Proof of the Vertue of these Waters, than the Inconveniencies which so many Persons have for so long a Time submitted to in order to have the Benefit of this Spring.

WORCESTER, *September* 1st, 1756.

J. WALL.

